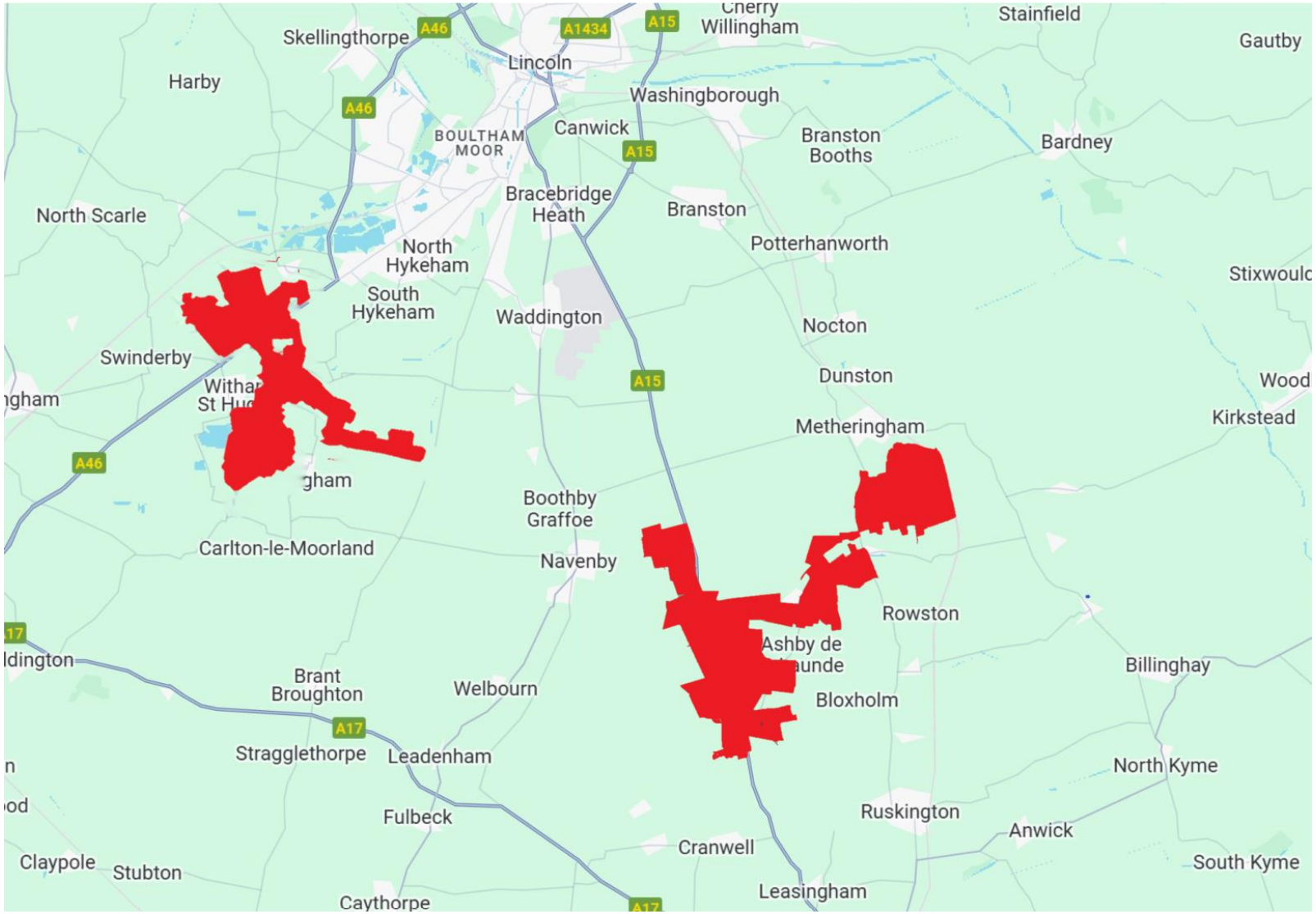
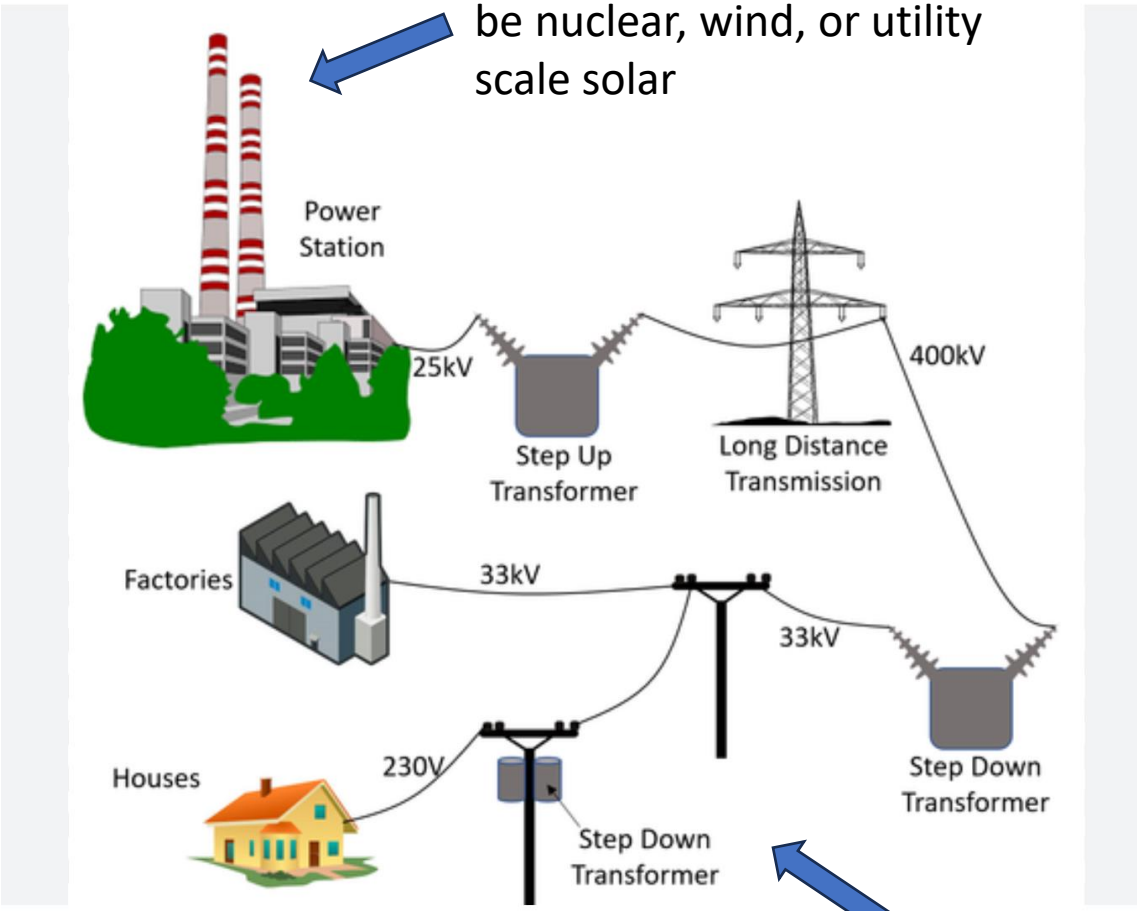
# The Proposed Solar ~~Farms~~ Power Stations



# National Grid Decarbonisation

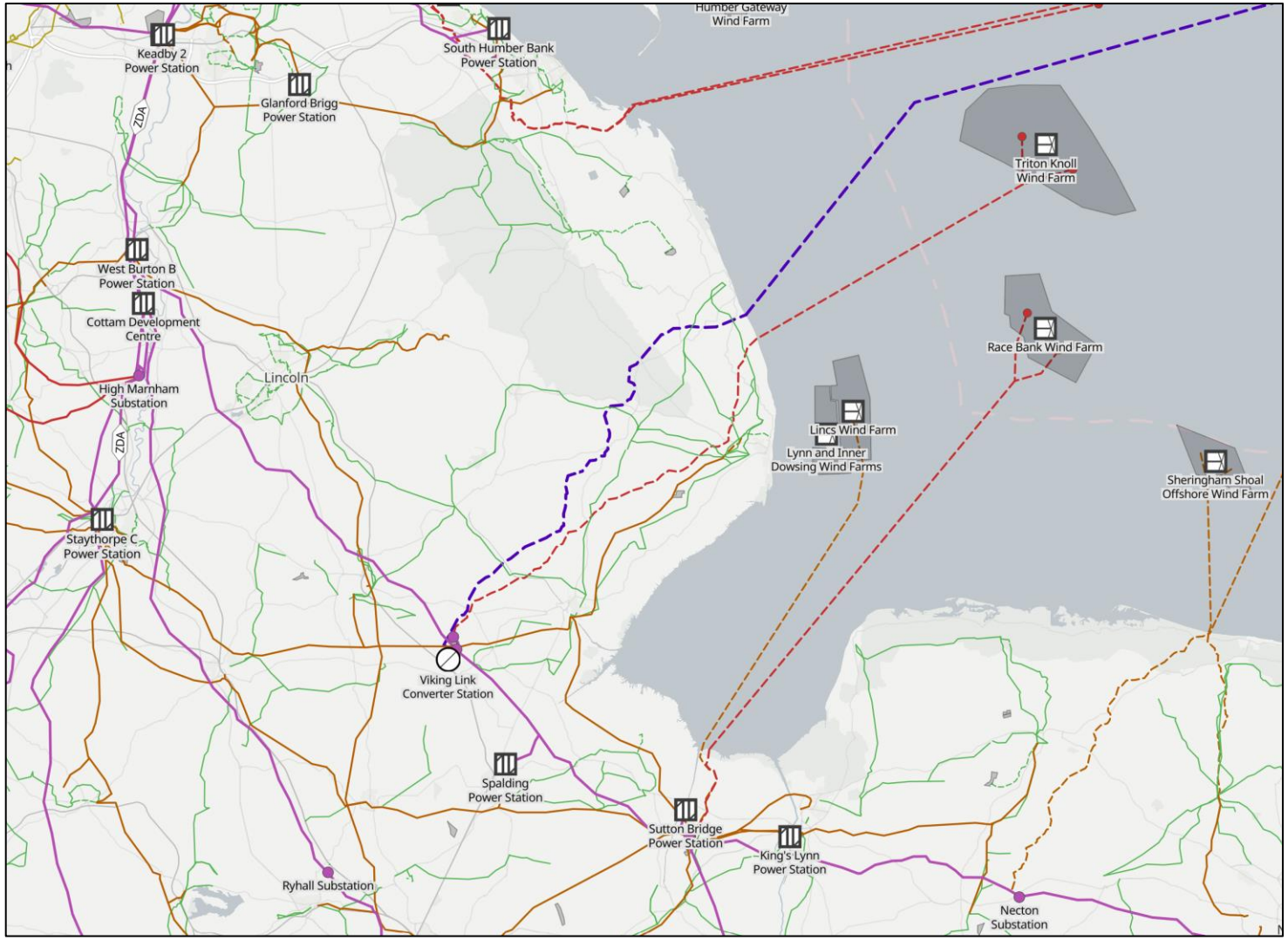
- The privatised national grid is divided into two parts
  - The transmission grid which carries electricity from power stations around the UK
  - Local distribution grids which connect up industry and homes
- Lack of investment in these grids has created several problems.
  - New power stations have difficulty connecting to the transmission grid if they are not located close to an existing power line.
  - The distribution grid does not have the current capacity to connect medium scale power generators or to supply every home with an EV charger or heat pump.

New power station could be nuclear, wind, or utility scale solar




Medium and small scale solar and wind would be connected into the distribution grid.

# National Grid Transmission Lines



## The Proposed Solar ~~Farms~~ Power Stations and Substation

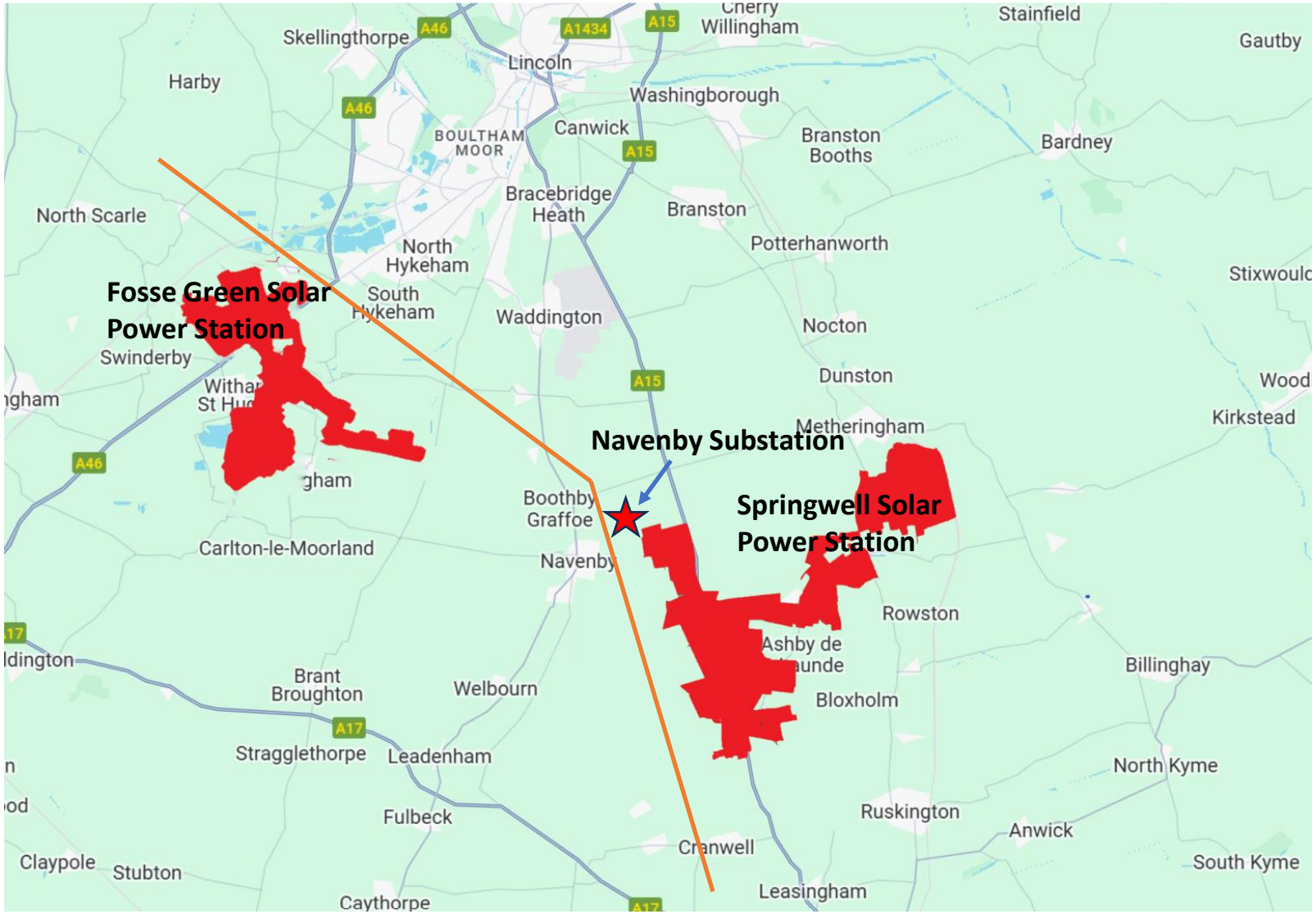
Both of the solar power stations will only be viable if they can obtain a connection into the electricity transmission grid.

That connection will be via a large new electricity substation proposed for Navenby Heath.

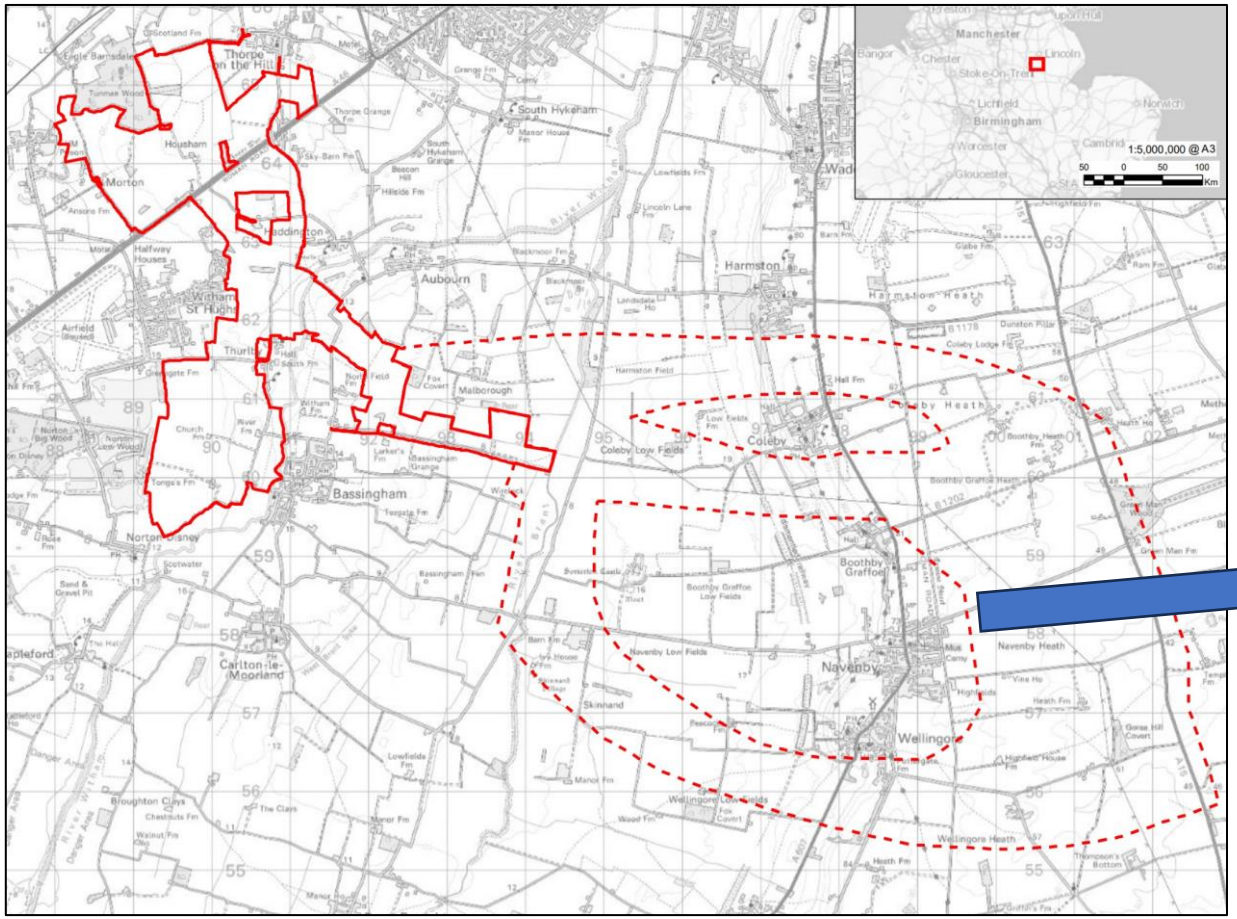
The substation will be spread over several sites, the only details currently available are the outline plans for a a 400MW Battery Storage Development.

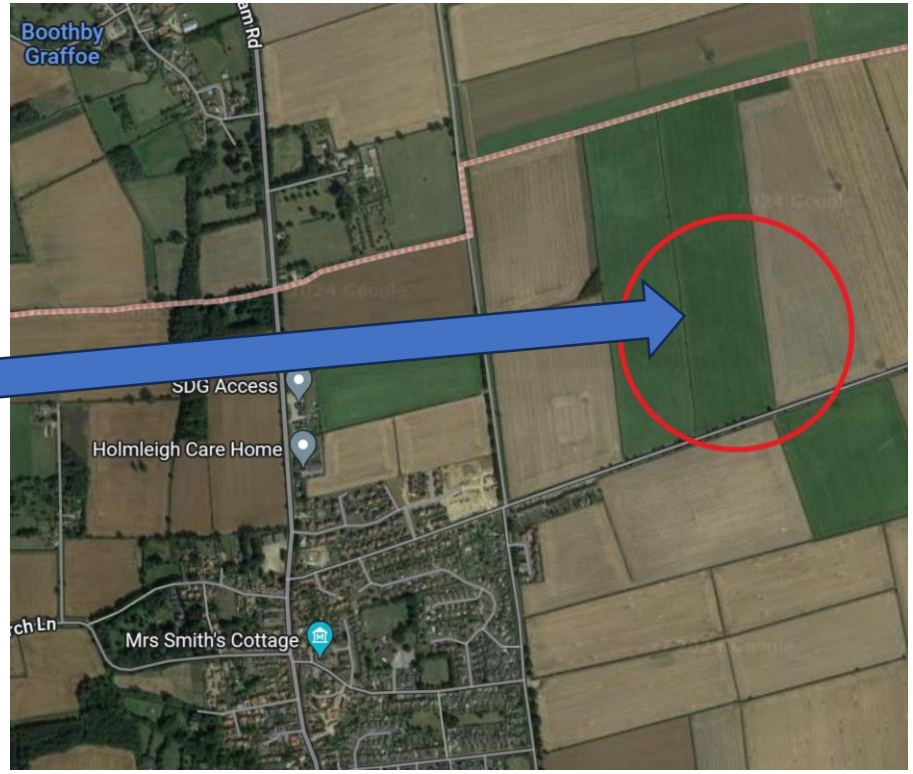
If the substation is built, it will be a big factor in gaining development consent for the solar power stations. In fact, the availability of a transmission grid connection may make development consent almost inevitable.

# The Proposed Solar ~~Farms~~ Power Stations and Substation



# THE PROPOSED SUBSTATION FIRST SITE




400MW Battery Storage Development incorporating 324no. Containerised Battery Storage Units, 54no. transformer/inverter blocks and 8 back up auxiliary transformers, 4no. storage containers for spare parts etc, substation comprising 4-6no. switchgear units, a control room and a HV compound with 2 Step up Transformers, associated access tracks, inverter, switchgear substations, boundary treatments and CCTV

# Opposition - summary


1. The loss of agricultural land, including high quality Best and Most Versatile Agricultural Land (this project + cumulatively in Lincs)
2. Large scale of the project & huge impact on the landscape and visual amenity of the area
3. Disruption to the community during the construction and decommissioning phases, as well as any significant maintenance and replacement works during the operational life of the project
4. Impacts on Public Rights of Way, their recreational value, and consequential negative impacts on the visitor economy
5. Impact on the mental health of residents if predominately rural location changes to a predominately industrial landscape
6. Impact of development on the natural environment and the potential to compensate for and mitigate such impact
7. Uncertainty of the operational lifespan of the project
8. Belief that environmental and economic benefits of utility scale solar power generation in the UK climate are being exaggerated, and do not begin to justify the effective industrialisation of our beautiful rural landscape

# Loss of Agricultural Land

- A new national food security index, found that just 17% of fruit and 55% of vegetables consumed in the UK are grown here

- Agri-food is Greater Lincolnshire's largest industry and supports 75,000 employees in agriculture, food processing, marketing and logistics with a GVA of over £3.7billlion.

- The sector generates 18% of local GVA and employs 13% of workers.

- The industry contains 6,000 companies.

- Greater Lincolnshire has significant strength at every stage of the food chain. Our agriculture produces over £2billion of crops and livestock, 11% of the English total. It has particular strengths in fresh vegetables with 30% of English production, 20% of sugar beet, 19% of poultry and 19% of ornamentals and flowers

# Lifespan

- Developers claim solar power stations will have a 40-year lifespan and the land will then be returned to agricultural use.  Planning is for a **temporary** installation.
- Very controversial – several competing opinions, many state it will revert to brownfield land for development. The word temporary has never before been used to describe a 40-year timescale planning application
- If energy from these solar power stations is needed now, why won't it be needed in 2070, and can the land be released to return to agriculture?
- Solar panel efficiency declines by approximately 1% per year. After 25 years panels will be operating at 80% efficiency and after 40 years at 66% efficiency
- Renewable technology is now supported by $500bn dollars investment p.a. and growing, new technologies are emerging which may make current solutions obsolete
- The conclusion is that project lifespan remains uncertain

# Battery Storage

- Batteries will NOT provide 24-hour power from solar. Max storage capacity for solar power stations will typically be a couple of hours of production
- Batteries provide additional income by trading energy and grid balancing services

Fire Hazards

- The bulk of battery storage systems use Li-ion technology
- Susceptible to “thermal runaways”, a chemical reaction that can led to serious fires and the emission of toxic gases. Events typically occur during periods of high charge and discharge
- Examples of fires have been reported in the press in recent years across a range of sectors

However:

- Most modern, high quality, battery packs, are designed with sophisticated control and thermal management systems to manage performance
- Li-ion technology is mature and used in almost all electric vehicles, storage batteries for solar panels, handheld power tools, laptops, and mobile phones

# CAN THE LOCAL COMMUNITIES SACRIFICE BE JUSTIFIED?

This will be a subjective decision, balancing the disadvantage to residents against the benefits to the wider population.

All the disadvantages have been listed, so what are the benefits to the wider population?

The Developers state the FGE solar power station will produce ***enough clean energy to power in the region of 110,000 homes***.

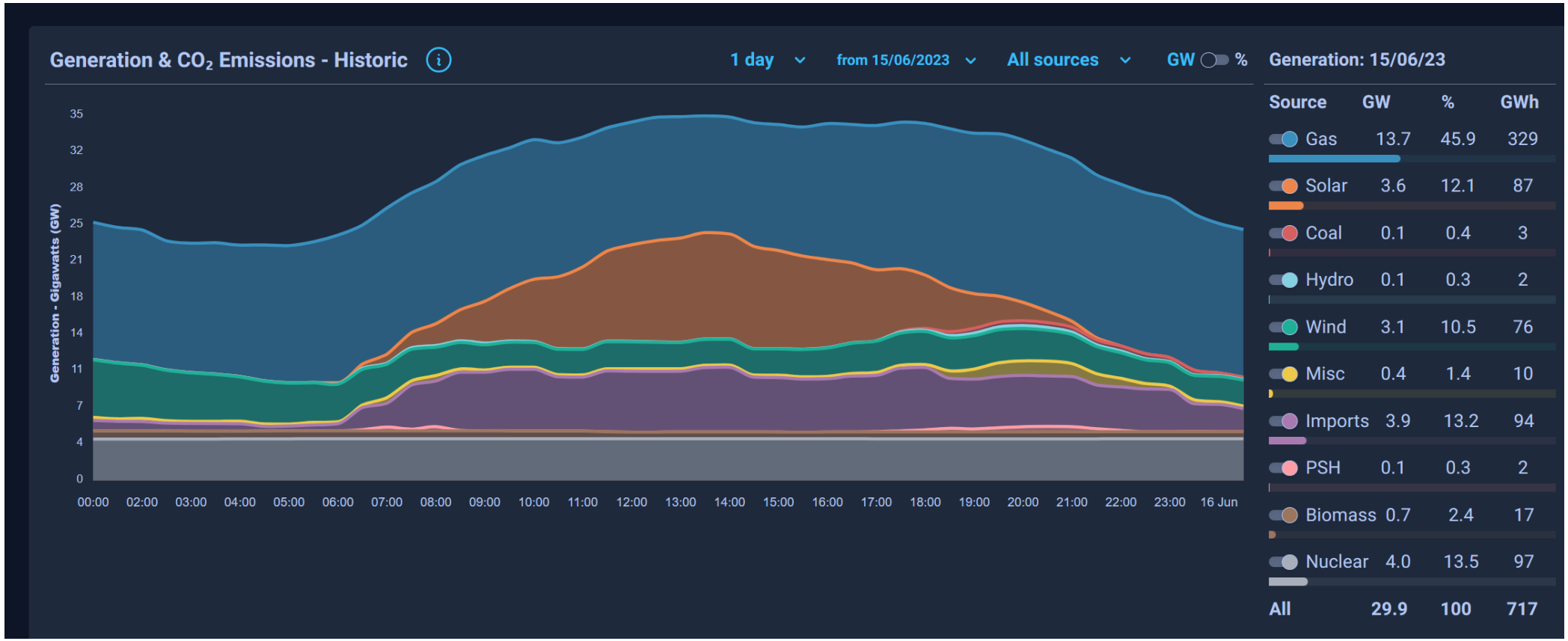
But, by 2035 the expectation is that the average home will have a heat pump and at least one electric vehicle. On that basis, the output is sufficient for approximately 27,000 homes.

The new demand could overwhelm the existing grid infrastructure. Heat pumps and fast EV chargers will significantly increasing peak demand. This could lead to:

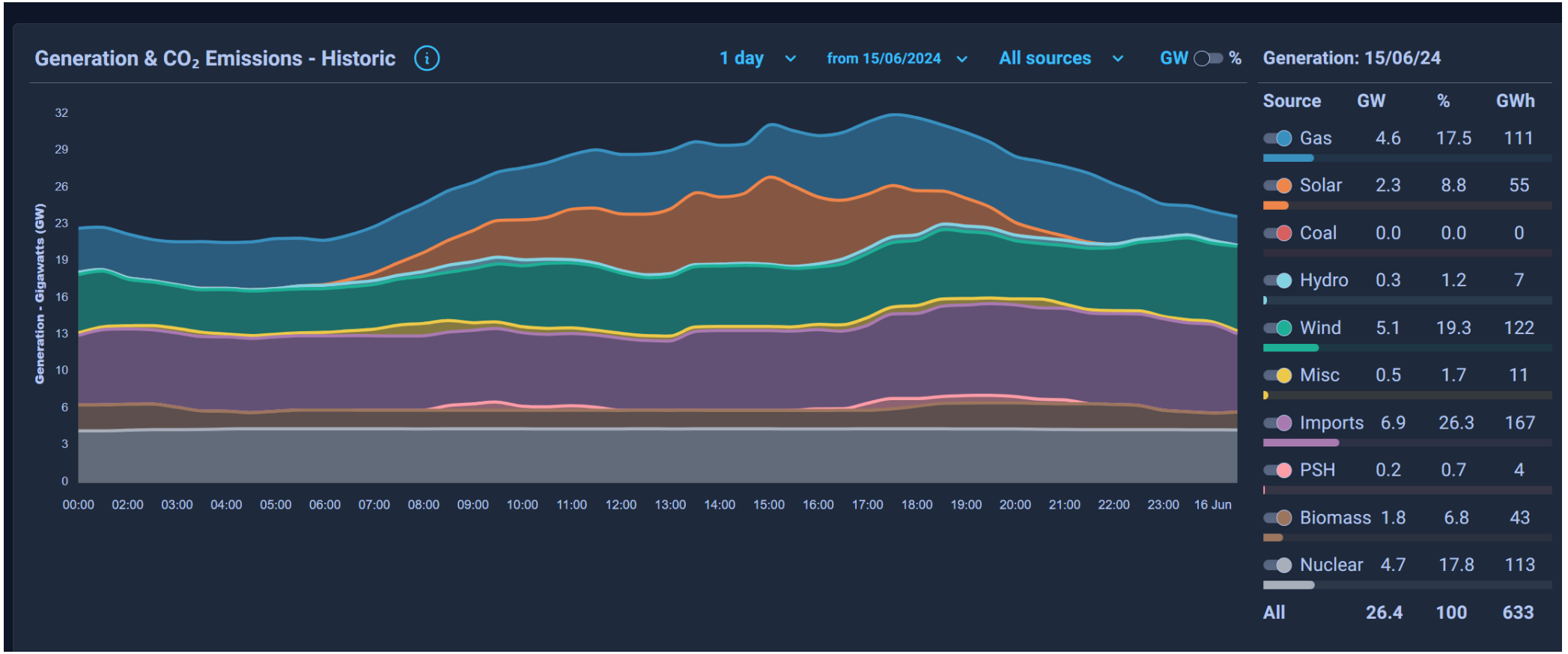
- Blackouts: If the infrastructure can't handle the load, temporary power outages might occur
- Voltage fluctuations: Increased demand can cause instability in the voltage, potentially damaging electronic devices

Even the 27,000 homes  statement needs further clarification.

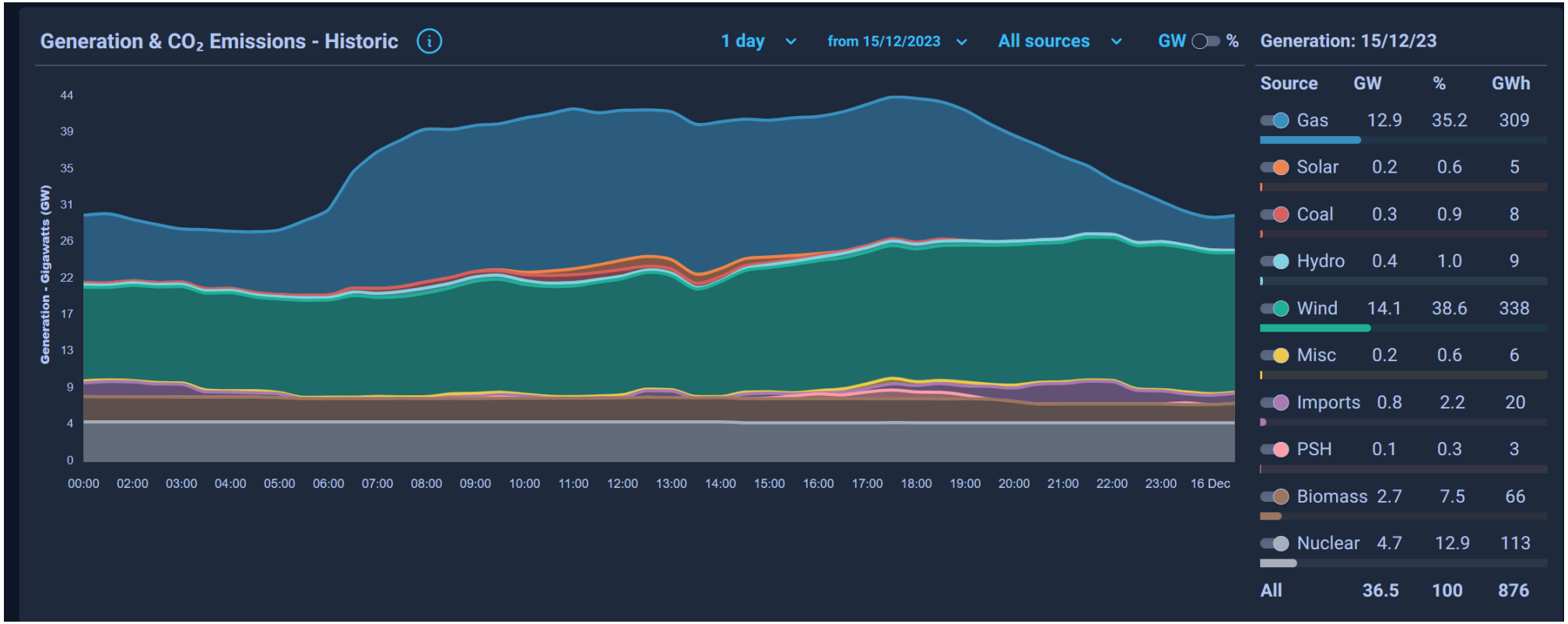
**In summer energy production is significant for about 12 hours as this graph from 15th June 2023 shows.**



**Energy production is much less on an overcast day as this graph from 15th June 2024 shows.**



**In winter energy production is insignificant as this graph for 15th December 2023 shows.**




**At other times of year, the output will vary between these extremes but, on average, it will be 11% of theoretical capacity.**

**Production is always limited to daylight hours.**

**If other renewables can't make up the shortfall, gas or nuclear will still be needed.**

## THORPE ON THE HILL PARISH COUNCIL'S POSITION

Statements about the number of homes that can be powered by solar power stations are very misleading.

If we assume that **all** solar power produced displaces gas production, a fair statement about the planned 5-fold increase in UK Solar capacity by 2035 would be:

***If the UK meets its solar expansion target, in summer months fossil fuel use could be reduced by between 30% and 40%.***

***However, in winter months, fossil fuel use will only be reduced by between 3% and 4%.***

***Over the year, fossil fuel use will be reduced by between 10% and 15%.***

The PC believes these levels of reduction do not justify the loss of good agricultural land and all the sacrifices involved for rural communities.

## THERE IS AN ALTERNATIVE

A report from CPRE analysed the solar capacity of rooftops and covered car parks across England.

The key findings are:

•Installing solar panels on existing rooftops and other land such as car parks could provide at least 40-50GW in England by 2035.

•In 2050, with further investment, there is potential to generate 117GW of low carbon electricity from roofs and other developed spaces.


**Remember**

An echo chamber of like-minded people, exchanging articles and links is futile.

- Seventeen concerns were raised in opposition to the Cleve Hill project in Kent.
- The Inspector balanced this against the need for solar energy and ruled in favour of granting consent.

**But:**

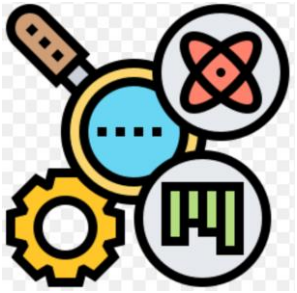
- None of the land in Kent was above Grade 3B.
- There was immediate spare capacity for grid connection because of a cancelled wind project.
- There were very few residential properties near the site.
- The Inspector's report accepted without qualification the Developer's statement;

**The Development is one where the proposal offers subsidy-free generation to power some 90,000 homes and thus a significant contribution in terms of renewable energy generation.**

To stop this development, we will need:

- To demonstrate strong local opposition to this development
- To raise all the concerns again but also put the developer's claims under close scrutiny
- To seek support from our NKDC councillors, our LCC councillors and our Member of Parliament

# TO FIND OUT MORE



Basic details of both solar power stations can be found by Googling either **Springwell Farm** or **Fosse Green Energy.**

Because they are so large, both solar farms will require a decision from the National Planning Inspectorate. If you want to explore all the details, including objections raised so far, Google either **Planning Inspectorate Springwell Farm** or **Planning Inspectorate Fosse Green Energy**.

The Planning Inspectorate website also has details of the large solar power station being constructed at Cleeve Hill in Kent, and the held over decisions for Mallard Pass near Stamford and Sunnica near Newmarket.

Pre-application details of the Sub-Station can be found by going to NKDC Planning Online and searching for the planning reference **23/0390/EIASCO**

It is also well worth Googling The **UK Solar Alliance** and **7000 Acres Group**, two well organised campaigning groups.